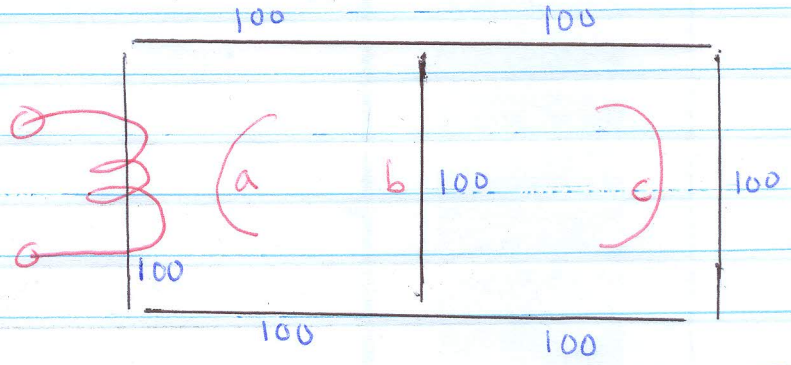

$\mu = 10^{-3}$ H/m

$l_b = 100$ mm

$A = 100\ mm^2$

$$S_a = S_c = 3S_b$$

$$S_b = \frac{l}{\mu A} = \frac{100\times10^{-3}}{10^{-3}\times100\times10^{-6}} = 10^6\ At/Wb$$

$$I = 10\ A \;;\quad N = 100 \;;\quad F = NI = 1000\ At$$

$$\phi_{tot} = \frac{F}{S_a + S_b // S_c} = \frac{1000}{\left(3 + \frac{1\times3}{4}\right)\times10^6} = 2.67\times10^{-4}\ Wb$$

$$\phi_a = 2.67\times10^{-4}\ Wb$$

$$\phi_b = 2.67\times10^{-4}\times\frac{S_c}{S_b + S_c} = 2.67\times10^{-4}\times\left(\frac{3}{1+3}\right) = 2\times10^{-4}\ Wb$$

$$\phi_c = \phi_a - \phi_c = 0.67\times10^{-4}\ Wb$$

$$L = \frac{N^2}{S_{tot}} = \frac{100^2}{S_a + S_b // S_c} = \frac{100^2}{3.75\times10^6} = 2.67\times10^{-3}\ H$$